US 20170105003A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2017/0105003 A1**

Lainema et al. (43) **Pub. Date: Apr. 13, 2017**

(54) **VIDEO CODING WITH HELPER DATA FOR SPATIAL INTRA-PREDICTION**

(71) Applicant: **Nokia Technologies Oy**, Espoo (FI)

(72) Inventors: **Jani Lainema**, Tampere (FI); **Alireza Aminlou**, Tampere (FI)

(73) Assignee: **Nokia Technologies Oy**

(21) Appl. No.: **14/881,493**

(22) Filed: **Oct. 13, 2015**

Publication Classification

(51) **Int. Cl.**

H04N 19/159	(2006.01)
H04N 19/593	(2006.01)
H04N 19/44	(2006.01)

(52) **U.S. Cl.**

CPC ***H04N 19/159*** (2014.11); ***H04N 19/44*** (2014.11); ***H04N 19/593*** (2014.11)

(57) **ABSTRACT**

For decoding a video stream, an encoded video stream is received with an indication of a prediction mode and an indication of one or more prediction helper values. While decoding this encoded video stream, a predicted value is calculated for each of at least one sample based on the indicated prediction mode and on the prediction helper value(s). The decoded video stream, incorporating each of the at least one samples as decoded using the respective calculated predicted value, is then output to at least one of a computer readable memory and a graphical display. An optional step function can be utilized to aid the helper values and enable non-linear prediction values in a given row or column of a prediction unit. At the encoder side the encoder decides the prediction helper values that it uses to encode the video stream that is stored or transmitted to the decoder.